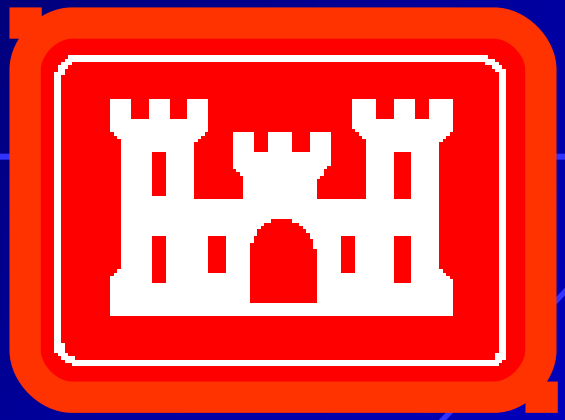


US Army Corps of Engineers

Savannah District

Presentation for the Economics & Environmental Analysis Conference July 16-18, 2002

Presented by
Mr. Leroy Crosby, Chief of Plan Formulation
Savannah District

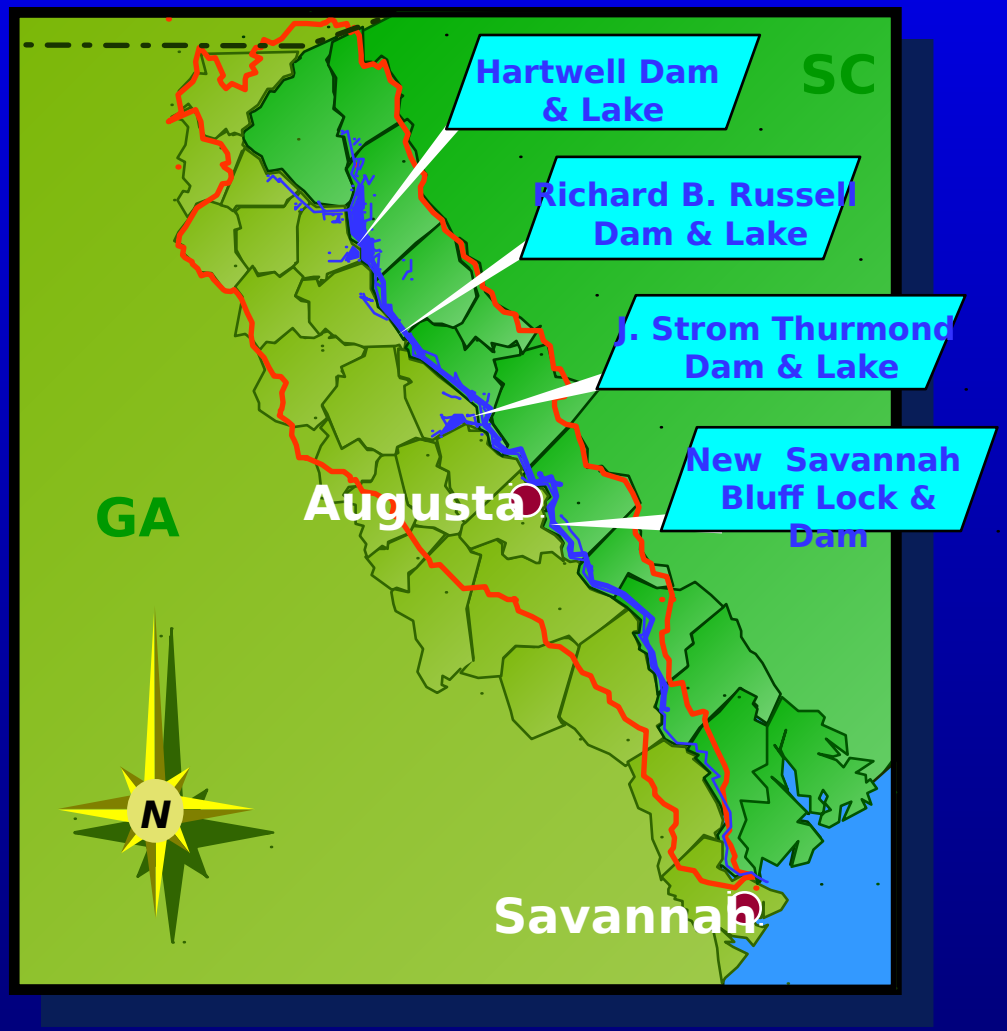
Comprehensive Water Resources Study for the Savannah River

The Nature Conservancy

Agenda

- Savannah River Basin Comprehensive Study
  - Basin Water Issues & Current Actions
- Working with The Nature Conservancy
  - Three Initiatives
    - Implementing MOU
    - Ecoregions
    - Dam Re-Operation Initiative
- Bringing Them Altogether.

Savannah River Basin Comprehensive



Comprehensive Water Resources Study for the Savannah River Basin

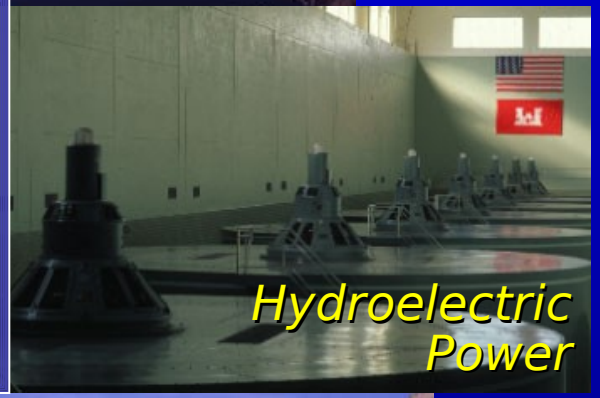
Activities Leading to the Study:

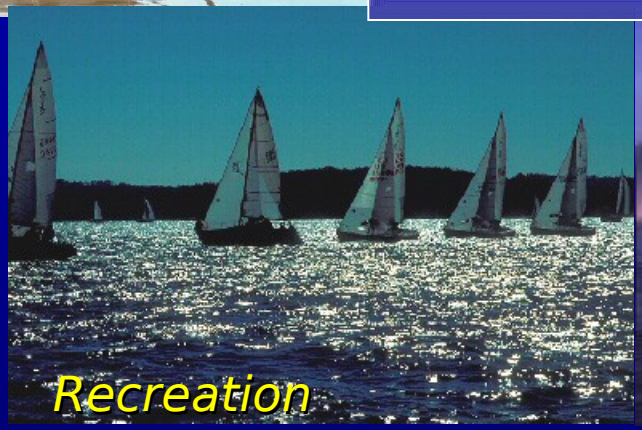
- **Drought Coordination - 1980's and now**
- **Meetings of GA & SC Water Resources Agencies**
- **EPA Savannah River Watershed Project**
- **New Study Authority**
  - **WRDA 96 Sec 414**

Actions - Recon

- Initiated Recon Study - Feb 98
  - Developed Management Structure
  - Identification / Revalidation of Water Resources Issues
  - Review of Technical Model(s)
- Completed Report Jul 99
- Project Study Plan Sep 99
- Feasibility Study Cost-sharing Agreement Signed 30 Jun 00

Savannah River Basin Comprehensive Study Balancing Uses





Basin Water Issues

- Upper Basin Needs vs. Downstream Needs
  - Lakes - River / Estuary
  - New Water Supply - Groundwater to River Supply
  - Maintain lake levels - Maintain or Enhance Flows
- Water Supply Allocations
  - Lake Levels for Recreation / Commercial Activities
  - In-Lake Reallocations
  - Downstream In-River Allocations
  - Groundwater Use - Future Coastal Supply
  - Future Demands
  - Impacts of Interbasin Transfers

Basin Water Issues (cont'd)

- Hydropower
  - Capacity & Energy
  - Regional Affects of Energy Production
  - Pump Storage Facilities
- Flood Control
  - Flood Control Below JST
  - Storage Reduction
  - Flood Plain Mitigation

Basin Water Issues (cont'd)

- Water Quality (Flows)
  - Discharge Permits and Droughts
  - Saltwater Intrusion & DO in Savannah Harbor
- Habitat
  - Ecological Flow Requirements
  - Wetland Impacts
  - Estuarine Issues

Basin Water Issues (cont'd)

- Recreation
  - Lake Levels for Recreation / Commercial Activities
  - Regional Economic Value of Recreation
- Aquatic Plant Control
  - Instream
  - In Lakes OK - have a plan
- Navigation
  - Commercial Navigation
  - SRS Requirements

Comprehensive Water Resources Study for the Savannah River Basin

Study Scope

- **Time**
  - **Recon - 18 Months**
  - **Feasibility - Four to Five Years**
- **Cost**
  - **Recon - $600K**
  - **Feasibility - $4 Million**
    - **Cost-shared 50/50%**
- **Study Design**
  - **Build on Partnerships**
  - **Adapting Existing Tools**

Comprehensive Water Resources Study for the Savannah River Basin

Current Direction

- **Feasibility Cost-Sharing Agreement - 30 Jun 2000**
- **Initiated Feasibility Phase**
  - **Two Phased Effort**
    - **Preliminary Phase**
    - **Detailed Phase**

Comprehensive Water Resources Study for the Savannah River Basin

Phase One Schedule -

- **Work With Stakeholder Groups**
  - **Clearly define their needs - current & future**
- **Model Preparation**
- **Develop Historical Data**
- **Develop/Evaluate Allocation Scenarios**
- **Have a plan? Or, on to Phase Two**

Comprehensive Water Resources Study for the Savannah River Basin

Phase Two Schedule -

- **Work With Stakeholder Groups**
  - **Clearly quantify their needs - current & future**
- **Additional Studies to support demands**
- **Model Evaluations**
- **Evaluate Allocation Scenarios**
- **Recommendations to Congress**

U.S. Army Corps of Engineers-The Nature Conservancy
Memorandum of Understanding

PURPOSE…

…to facilitate effective and efficient management of important biological resources within the context of the Corps' civil works and regulatory missions

U.S. Army Corps of Engineers-The Nature Conservancy Memorandum of Understanding

Objectives include…

- Protect or restore freshwater and coastal habitats for native animals and plants and natural communities;
- Advance our understanding of the distribution and condition of biological diversity associated with our Nation's marine, coastal and riparian waters;
- Promote non-structural flood protection and other measures to maintain natural ecosystem functions at sustainable levels;
- Encourage water management measures that benefit native animals and plants and natural communities while meeting human needs;
- ***Foster demonstration projects to test promising water management strategies while monitoring their efficacy in meeting multiple objectives;***
- Cooperate in the monitoring and management of rare and endangered species and their habitat potentially affected by projects and programs pursuant to this MOU.
- Promote the gathering and sharing of scientific data and research by either entity as it may be related to projects of mutual interest and concern.

Dam Re-Operation Initiativ

Objectives…

- Advance The Nature Conservancy's conservation goals and the U.S. Army Corps of Engineers' mission in ecosystem restoration within the context of the national Memorandum of Understanding (MOU).
- Export to additional projects the lessons learned from the Corps-TNC collaboration on re-operating the Green River Dam (Kentucky) for ecosystem improvement.
- Analyze successes, problems, and solutions for re-operating Corps dams to achieve more ecologically sustainable flows, while meeting human needs.

The Nature Conservancy

Saving The Last Great Plac

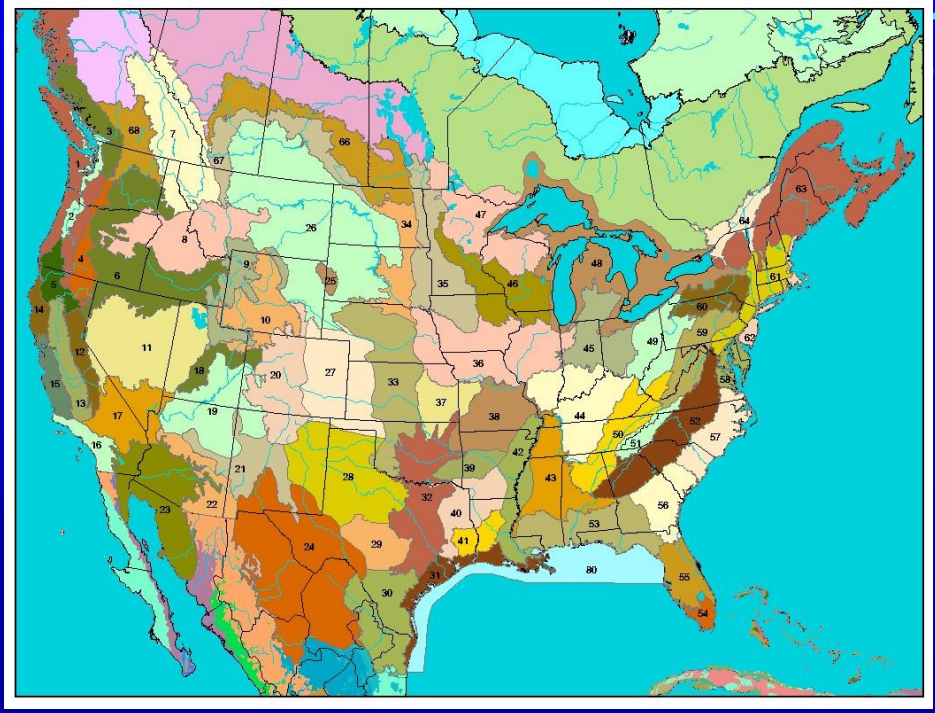
The Nature Conservancy's Mission

To preserve the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.

The Nature Conservancy®

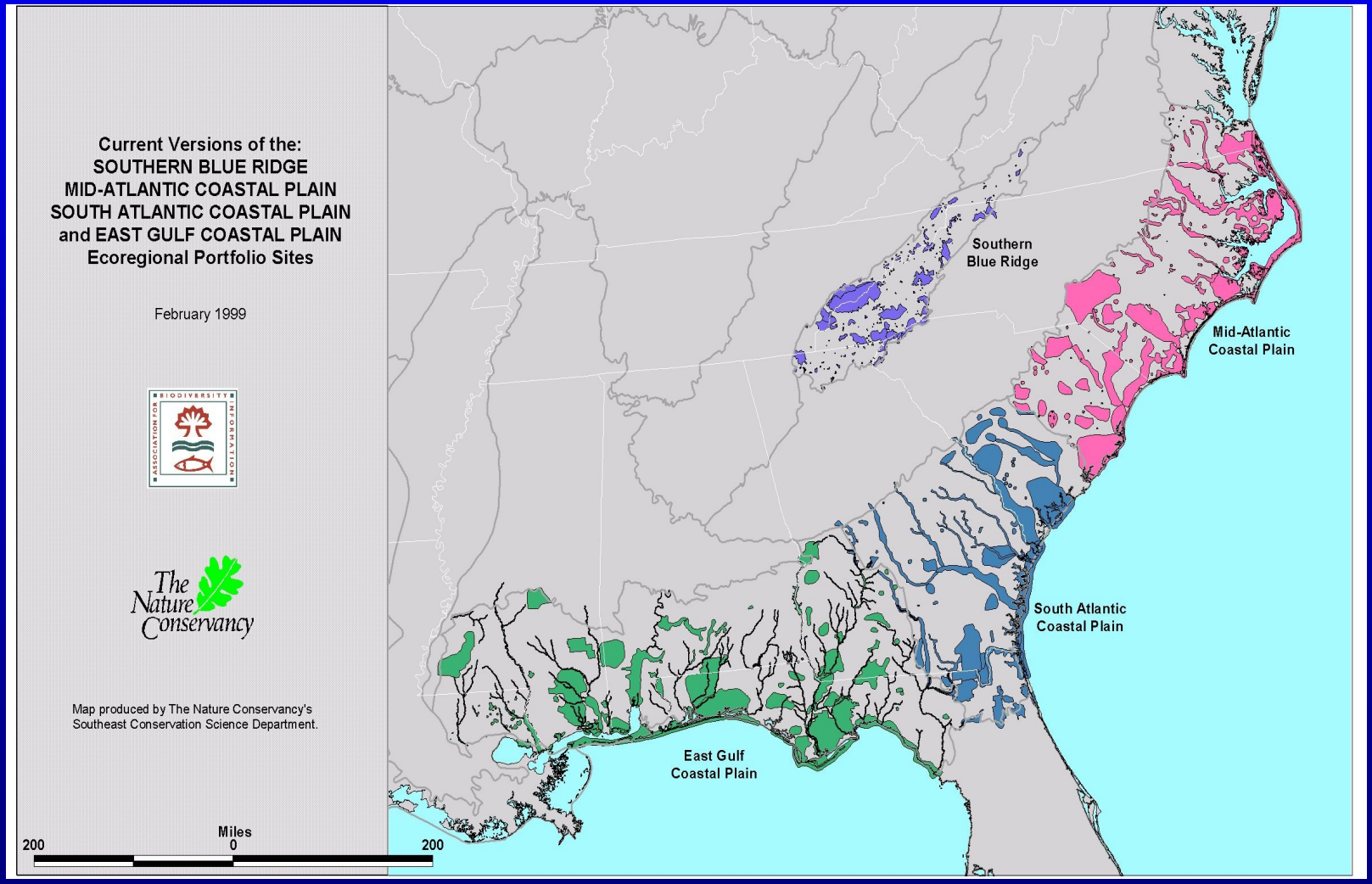
Ecoregional Planning

What is an ecoregion?



- Large, contiguous units of land and water defined by ecological and environmental boundaries, not geopolitical.
- Distinguished by similarity in climate, vegetation, soil, geology, and topography.
- Ecoregions provide a biologically meaningful framework for setting conservation priorities.

Southeastern Region



Savannah River Basin

Critical Features

- Large Coastal Plain River, Floodplain and Associated Communities
- Tidally Influenced Wetlands
- Blackwater Rivers and Tributaries
- Shoals

Critical Features

- Isolated Wetlands
- Longleaf Pine Mosaic
- Mesic Bluffs and Ravines
- Granitic, Serpentine and Ultramaphic Outcrops

Globally Rare Species

- 2 Amphibians
- 5 Birds
- 4 Fish
- 1 Invertebrate
- 4 Mussels
- 21 Plants
- 2 Reptiles
- 89 Species listed by the GA & SC Heritage Programs

Guiding Principles

- Non-confrontational
- Science-based
- Cooperative, solution-oriented
- Emphasize places, people and the future
- Partnerships and community-based conservation

Ecologically Sustainable Water Management

Ecologically sustainable water management protects the ecological integrity of affected ecosystems while meeting inter-generational human needs for water.

Ecologically sustainable water management protects the ecological integrity of affected ecosystems while meeting inter-generational human needs for water.

Ecological integrity...
is maintained when all existing native species and the natural productive

The goal is *not* to create optimal conditions for all species all of the time; rather, we want to create adequate conditions for all native species *enough* of the time.

The Six Step Framework for Ecologically Sustainable Water Management

Step 1: Define Ecosystem Flow Requirements

Step 2: Define Human Needs

Step 3: Identify Areas of Potential Incompatibilities

Step 4: Foster Collaborative Dialogue

Step 5: Conduct Water Management Experiments to Resolve Uncertainty

Step 6: Design and Implement an Adaptive Management Plan

Working Together

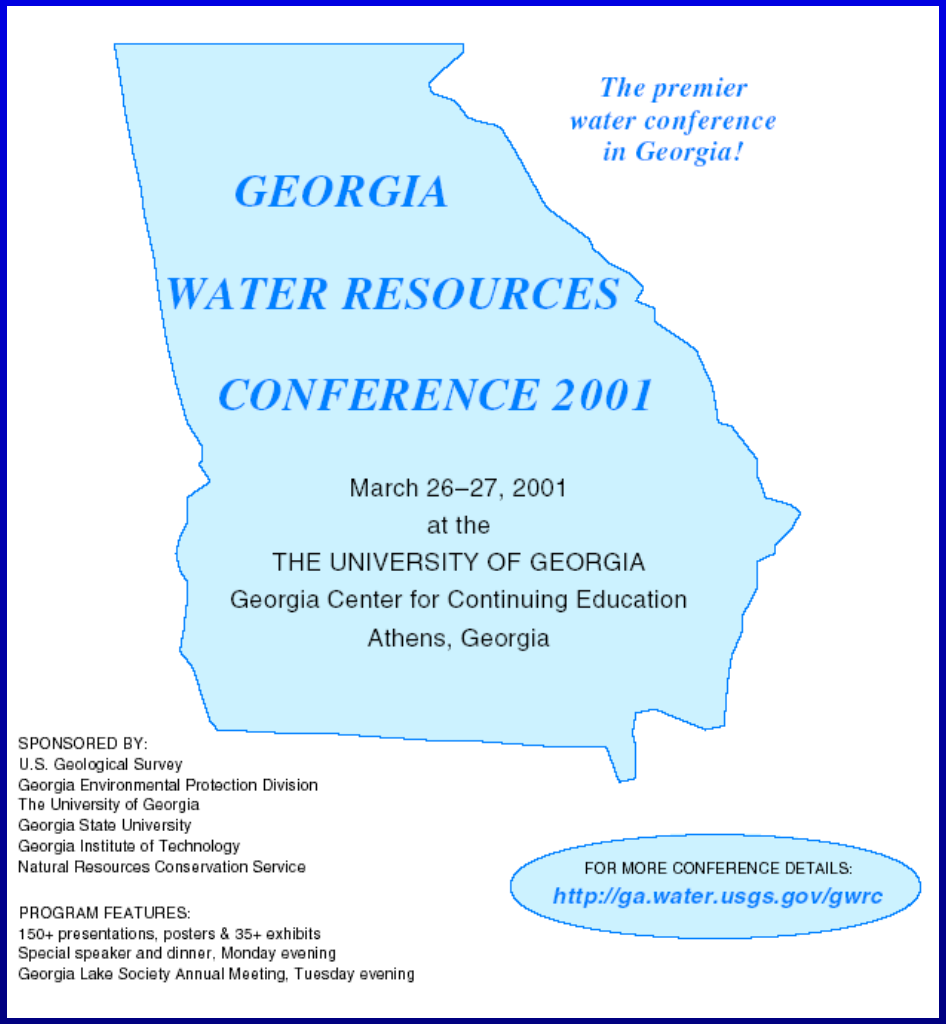
Coordination / Communication

Look for us on the web!

www.sas.usace.army.mil/srbstudy.htm

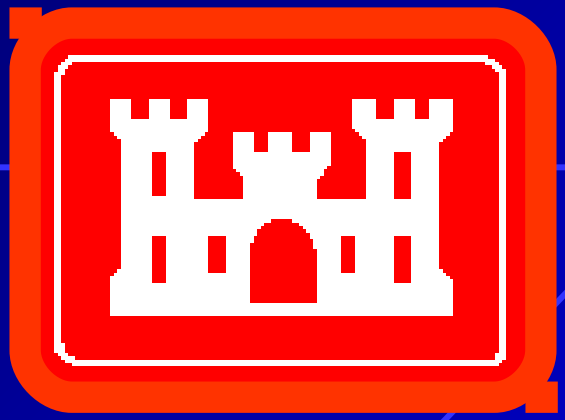
Coordination / Communication

Savannah River Track



8th Biannual Conference

23-24 April, 2003



Questions?